1.1 PURPOSE AND NEED FOR PROJECT AND REPORT

The U.S. Army Corps of Engineers, San Francisco District (Corps), and the City of St. Helena, California, the project's non-Federal sponsor, propose to remove or modify Upper York Creek Dam and appurtenances, remove accumulated sediment, and restore the local ecosystem structure in order to improve fish passage for the federally listed steelhead *(Oncorhynchus mykiss*), reduce the potential for future downstream sediment releases and fish kills, and restore approximately 3 acres of degraded riparian and riverine habitat surrounding Upper York Creek Dam to a more natural condition.

Upper York Creek Dam has been identified as a significant obstacle to passage for steelhead in the threatened Central California Coast (CCC) Evolutionary Significant Unit. Under the current conditions, York Creek is known to be one of most significant spawning and rearing streams for steelhead within the Napa River Watershed Basin for the CCC steelhead. The removal or breeching of Upper York Creek Dam would open approximately 2 miles of suitable upstream habitat for steelhead.

This detailed project report presents the results of studies for ecosystem restoration in the York Creek drainage basin northwest of the City of St. Helena, Napa County, and approximately 60 miles north of San Francisco.

1.2 STUDY AUTHORITY

This report was prepared as an interim/final response to the study authorization contained in Section 206 of the Water Resources Development Act (WRDA) of 1996 (Public Law 104-303), as amended, which reads as follows:

"(a) *The Secretary may carry out an aquatic ecosystem restoration and protection project if the Secretary determines that the project – (1) will improve the quality of the environment and is in the public interest; and (2) is cost-effective…*"

Section 206 of the 1996 WRDA is one of the nine legislative authorities under which the Corps of Engineers is authorized to plan, design, and construct certain types of water resource or system restoration projects that are of limited scope and complexity, without additional Congressional authorization. These authorities are called the Continuing Authorities Program (CAP) when referred to as a group. Section 206 specifically provides authority to undertake "aquatic ecosystem restoration and protection projects that (1) improve the quality of the environment, (2) are in the public interest, and (3) are cost effective." The Federal share of initial implementation costs for any single Section 206 project may not exceed $5 million.

Under the Section 206 study authority, the reconnaissance phase of the Upper York Creek study was initiated in December of 2001. The reconnaissance study showed that there was federal interest in continuing the study into the Corps' feasibility phase. The City of St. Helena, as the non-Federal sponsor, and the Corps initiated the feasibility study in October of 2002.

1.2.1 COST SHARING

Per Section 210 of the WRDA 1996, the non-Federal share of the implementation costs for ecosystem restoration projects would be 35 percent of the project or separable ecosystem element costs, unless project authorization specifies otherwise. The feasibility phase (and Design and Implementation Phase, if required) for a Section 206 study is initially Federally financed. Cost sharing initiates in the Construction phase and is completed at the closure of construction. During construction, the non-Federal sponsor is responsible for funding its share of the construction cost and its share of all previous planning and design costs (which was initially Federally financed). Post construction operations, maintenance, repair, rehabilitation, and replacement (OMRR&R) is then the full responsibility of the non-Federal sponsor.

In most cases, the non-Federal sponsors shall provide 100 percent of the lands, easements, rights-of-way, utility or public facility relocations, and dredged or excavated material disposal areas (LERRDs), and operation, maintenance, repair, rehabilitation, and replacement (OMRR&R). The value of LERRDS shall be included in the non-Federal 35 percent share. Where the LERRD exceeds the non-Federal sponsor's 35 percent share, the non-Federal sponsor would be reimbursed for the value of LERRD which exceeds their 35 percent share.

1.3 STUDY LOCATION

The project area is within the York Creek drainage basin, shown in Figure 1.1, and is located to the northwest of the City of St. Helena, Napa County approximately 60 miles north of San Francisco. The York Creek watershed is about 5 square miles and originates from the California Coast Range on the western side of the Napa Valley watershed at an elevation of approximately 1,800 ft. York Creek is a tributary to the Napa River, which flows to the Pacific Ocean via San Pablo Bay. The creek flows in an easterly direction through a narrow canyon before joining the Napa River northeast of the city of St. Helena in Napa County at an elevation of approximately 225 ft.

The upper and larger part of the watershed is located in unincorporated areas of the county; the lower and smaller portion of the basin lies within the city limits of St Helena. The watershed is sparsely populated mountainous terrain with most urbanization accruing downstream of the project site.

The project area includes the Upper St. Helena Dam and Reservoir on York Creek (Upper York Creek Dam and Upper Reservoir). The Upper York Creek Dam is an earthen dam that was built in 1900 and is located approximately 1.5 miles upstream of the City of St. Helena. The Upper Reservoir, though now abandoned as the result of siltation, was originally used for water storage.

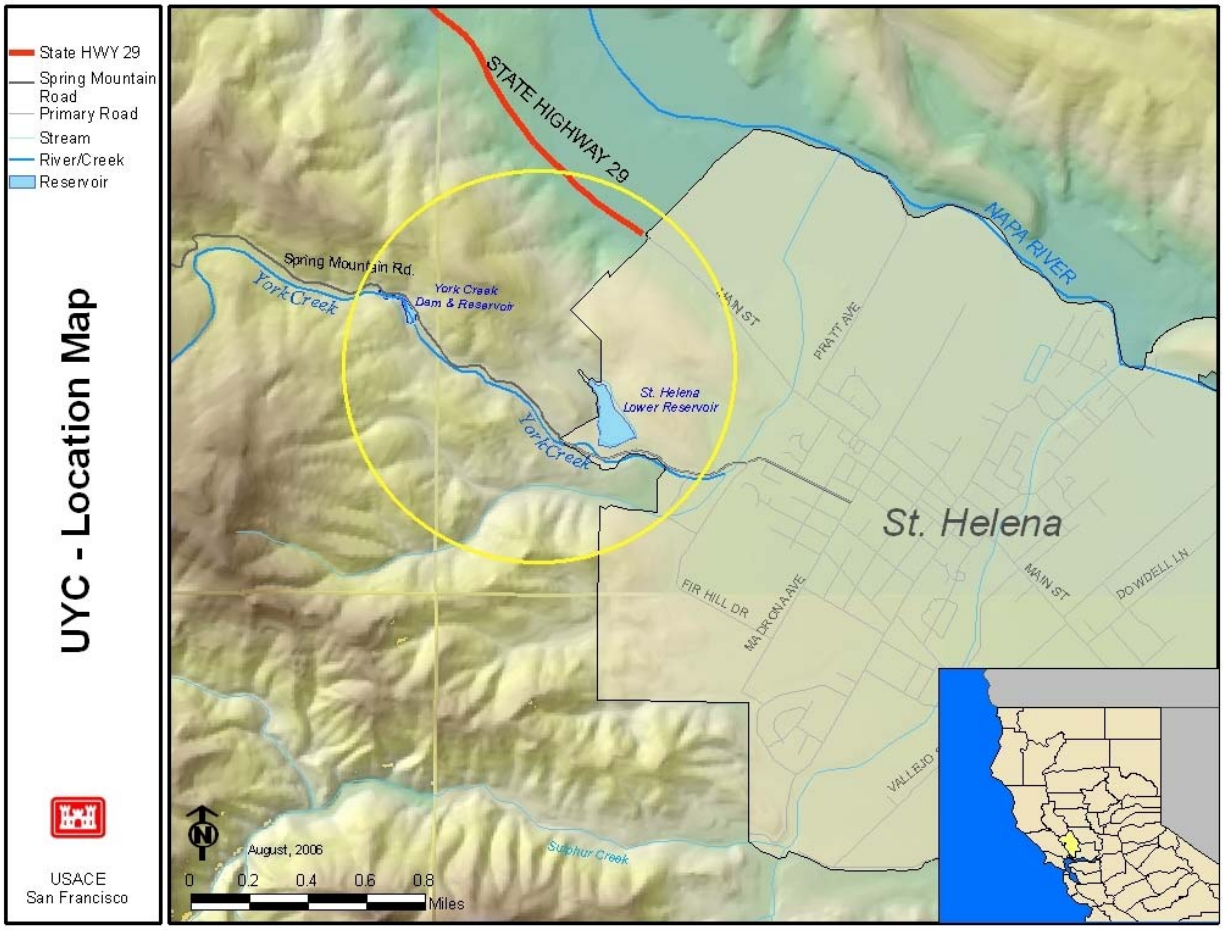

Figure 1.1. Project Location.

1.4 CONGRESSIONAL DISTRICTS

The Upper York Creek Basin is located in Napa County which is situated in the 1st Congressional District of California (Petaluma), Representative Mike Thompson.

1.5 STUDY SPONSOR AND PARTICIPANTS

The non-Federal sponsor for the feasibility phase of the Detailed Project Report (DPR) is the City of St. Helena. The US Army Corps of Engineers, San Francisco District, and the City of St. Helena jointly developed the ecosystem restoration plan presented in this report.

During the Feasibility Study, the staff from the City of St. Helena the agencies listed below participated in monthly team meetings with the study technical team. These agencies collaborated and contributed to the study effort throughout the study.

- U.S. Army Corps of Engineering Regulatory Branch (Corps Regulatory)
- California Department of Fish and Game (DFG)
- California Regional Water Quality Control Board (RWQCB)
- City of St. Helena (City)
- Department of Water Resources (DWR)
- Napa County District Attorney's office
- National Marine Fisheries Service (NMFS)
- United States Fish and Wildlife Service (USFWS)

1.6 HISTORY OF UPPER YORK CREEK DAM REMOVAL INVESTIGATIONS

On July 28, 1992, during routine maintenance of the reservoir outlet, there was an accidental sediment discharge downstream of the dam. This significant release resulted in a silt discharge "within the stream bed from the face of the dam to a point where the Napa River joins the stream" (DFG, July, 1992). The total distance of impact was approximately 2.5 to 3 miles long. The depth of the silt deposits varied from heavy deposits (up to 18 inches) just below the dam and continuing downstream for about 0.5 miles, gradually thinning until only a light covering of fine silt was deposited a the confluence with the Napa river (DFG, July 1992; DFG Aug 1992).

According to a DFG letter dated July 30, 1992, this sediment release was the fourth release since 1965. There have been accidental sediment releases in 1965, 1973, 1975, and 1992. In each incidence, "dense anaerobic sediments, high in toxic hydrogen sulfide, were released from the dam and deposited in pools and riffle areas downstream, quickly suffocating and burying all fish and aquatic invertebrates within a mile or more of the dam" (DFG, July 30, 1992).

After this discharge, DFG filed a complaint with the Napa County District Attorney. On September 30, 1992, DFG and the City agreed that the City should remove the existing earthen dam structure on Upper York Creek. The parties signed an agreement obligating the City to remove the dam, stabilize silt, remove silt that had filtered downstream, and take certain precautions to preserve the stability and natural character of the area.

In October 1993, the City applied for a Corps Regulatory Clean Water Act Section 404 permit to remove the dam. This application and a revised application in 1994 were determined to be incomplete. At the time of the initial 1993-1994 coordination with Corps Regulatory, steelhead in the CCC (Central California Coast ESU steelhead) were not yet listed pursuant to the Endangered Species Act (ESA), and the Corps was not obligated to initiate Section 7 consultation with NMFS. On August 18, 1997 a combinations of factors lead NMFS to list CCC steelhead as threatened, pursuant to the ESA. Loss of habitat and threats to their current range were cited as two leading factors.

In August 1998, and after the listing of steelhead, the City sent a letter to Corps Regulatory Branch, requesting that they reactivate the previous permit application for dam removal. This was request was declined and cited lack of adequate information to evaluate impacts to the aquatic environment from the project.

In October 2000, a letter was sent from NMFS law enforcement to the City Manager of St. Helena, with an attachment that provided clarification about the City's potential liabilities under the ESA if Upper York Creek Dam were to remain in place. In a letter dated November 21, 2000 the City's Attorney sent the NMFS, Corps Regulatory Branch, DFG, and the Napa County District Attorney's Office a letter explaining that it was the City Council's position "that Upper York Creek Dam should be at least be breached" to allow steelhead passage and "that the downstream diversion structure should be modified so that it is not a barrier or impediment to the passage of steelhead."

A meeting was held at the City's Offices on February 28, 2001 to discuss the project. Representatives from NMFS, the City, DWR, DFG, Corps' Regulatory and Planning branches, and the Napa County District Attorney's Office attended. At the meeting, representatives from DWR stated their intention to assist the City by providing planning and permitting services for the project to remove Upper York Creek Dam and modify the diversion structure. Because in-stream work and stream dewatering were identified as being necessary to correct the adverse effects on the listed species, NMFS advised that the project would likely require formal a Section 7 consultation.

In September 2001, DFG and the City successfully petitioned the Superior Court of Napa County to dismiss the case brought by DFG 1993 and void the Court's order in that case. An order of dismissal was entered by the Court on September 17, 2001. The earlier decision was declared null and void and DFG's claims were dismissed without prejudice. The judge's order included a stipulation that permits DFG to re-file their claim in court if necessary. St. Helena obligation to comply with the 1993 order of the court has indeed.

On November 28, 2001, a meeting was held at the City's Offices for DWR to give an update on the status of project planning and design. Representatives from NMFS, the City, DWR, DFG, Corps Civil Works and U.S. Fish and Wildlife Service attended. This meeting initiated the Corps' Civil Works ecosystem restoration project.

Today, the dam continues to block aquatic fish passage and sediment has led to further degradation behind the dam. In 2004, the City and DWR completed a "Fish Passage Improvement Project" that removed the only other fish passage barrier on York Creek. The diversion structure was .5 miles below Upper York Creek Dam. It was a 5 feet high concrete masonry diversion structure that diverted water from York Creek to the Lower Reservoir. The modifications involved removal of the concrete structure, creation of cascading steps with resting pools, bank stabilization, and native plant generation. The project has opened .5 miles of habitat and improved stream function and fish passage upstream to the York Creek Dam.

Currently, the City is working with the Corps to remove the second fish passage barrier on York Creek: the Upper York Creek Dam. Until the dam is removed, and to prevent a sudden release of sediment, the City has committed to periodical removal of excess sediment from behind the dam. They are currently planning to remove sediment in September-October 2006.

1.7 EXISTING STUDIES

DWR prepared several reports and analyses in 2001-2002 for removing the dam. These reports are included in the following section. Generally, the DWR reports provided baseline studies and planning efforts for the removal of the dam. Reports included biological baseline reports, hydrologic and hydraulic baseline reports, as well as several planning documents. The Corps has utilized these reports to the maximum extent possible to avoid duplicate efforts

- California Department of Water Resources (DWR). August 2001. *Sediment Sampling and Analysis of Upper York Creek dam and Upper Reservoir Site Integrated Storage Investigation (ISI).* This analysis was done for determining whether specific contaminants, namely heavy metals and organochlorine pesticides, are present in the sediment at concentrations that exceed existing regulatory threshold limits. None of the composite sediment and background soil samples collected at the project site exceeded existing Total Threshold Limit Concentration (TTLC) values for each of the requested contaminants.
- DWR. October 2001. *California Red-Legged Frog Field Survey Results and California Freshwater Shrimp Habitat Assessment*. This report contains results of red-legged frog field surveys for Upper Reservoir, York Creek in the vicinity of Upper York Creek Dam and the downstream masonry diversion structure on York Creek.

- DWR. March 2002. *Revegetation and Monitoring Plan for the Upper York Creek Dam Removal and Stream Restoration Project.* This document provided revegetation and monitoring plans for the Upper York Creek Dam Removal Project and was used as baseline information while developing the Corp's 2006 Revegetation Report.

- DWR. April 2002. *York Creek Sediment Transport Analysis.*

- DWR. July 2002. *York Creek Dam Removal – Hydraulic Analysis*. Erika Kegel.

- DWR. November 2002. *Initial Study for the York Creek Diversion Modification Project,* The purpose of this study was to determine whether the proposed diversion project would result in any potentially significant impacts to the environment pursuant to California Environmental Quality Act (CEQA). It provides watershed baseline information for the dam removal project.

- DWR. 2002. *Biological Assessment for the York Creek Dam Removal and Stream Restoration Project.* A draft of this document was located and used for basic information

- DWR. 2002. York Creek Dam Removal – Hydraulic Analysis.

- ENTRIX, INC. November 27, 2002. *York Creek Physical Baseline Assessment Report*. This initial assessment focused on geomorphic conditions and physical aquatic habitat of seven identified stream reaches from the confluence with the Napa River upstream to York Creek's headwaters.

- Hanson Environmental, Inc. 2000. *Assessment of Potential Upstream Passage of Anadromous Salmonids at the City of St. Helena Dam Site on York Creek, Napa County*.

- Innovative Technical Solutions, Inc. December 2003. *Final Report, HTW Assessment, Upper York Creek Ecosystem Restoration Project.* The purpose of the assessment was to provide information to characterize the material in the earthen Upper York Creek Dam and in the sediment bed that has accumulated on the upstream side of the dam in the footprint of the former reservoir. Characterization of these materials in necessary to fully evaluate options for handling and disposal of reuse of these materials should the dam be removed.

- Napa County Resource Conservation District (NCRCD). October 2005. *Central Napa River Watershed Project: Salmonid Habitat Form and Function*. This project developed a comprehensive fisheries assessment of the central portion of the Napa River and its tributaries, including York Creek. The project provides both general and site-specific recommendations for restorative actions benefiting salmonids, with emphasis on steelhead trout (*Oncorhynchus mykiss*) and Chinook salmon (*Oncorhynchus tshawytscha*). Recommendations are focused on creating or restoring geomorphic and ecological functions and processes that support salmonids and improve aquatic and adjacent riparian habitat.

- Koehler, J. 2005. *A subsection of The Central Napa River Watershed Report, prepared for the California Department of Fish and Game*.

- St. Helena, City of. January 2004. *Final Environmental Impact Statement for the City of St. Helena York Creek Diversion Modification Project*. The Environmental Impact Report (EIR) assesses the potential effects of the proposed modification to the York Creek water diversion structure (Diversion Structure). This document provides York Creek baseline information to the Upper Dam Removal project team.

- St. Helena, City of. 2002. *Initial Study/Proposed Mitigated Negative Declaration for the Upper York Creek Dam Removal and Stream Restoration Project*. July.

- Stillwater Sciences. 2002. *Napa River Basin Limiting Factors Analysis FINAL TECHNICAL REPORT*. Prepared for San Francisco Bay Water Quality Control Board and California State Coastal Conservancy. June 14.

- USACE (US Army Corps of Engineers) 2005 *Upper York Creek Dam Removal Project Site and Alternatives Evaluation*. Sacramento District, March 15.

- York Creek Dam Removal – *Slope Stability Analysis*. June 5, 2002. Author Unknown.